WHAT IS CLAIMED IS:

1. A controller for use with a power train of a power converter including a switch configured to conduct for a duty cycle, comprising:

an oscillator configured to provide a clock signal having multiple phases; and

a modulator configured to select a phase of said clock signal as a function of a portion of a digital duty cycle signal to refine a resolution of said duty cycle and provide a signal to control said duty cycle of said switch as a function of said digital duty cycle signal.

2. The controller as recited in Claim 1 wherein said modulator is configured to provide a pulse width modulated signal to control said duty cycle of said switch.

3. The controller as recited in Claim 1 wherein said digital duty cycle signal includes least and most significant bits, said modulator being configured to select said phase of said clock signal as a function of said least significant bits of said digital duty cycle signal to refine said resolution of said duty cycle.

4. The controller as recited in Claim 1 wherein said digital duty cycle signal includes least and most significant bits, said modulator being configured to provide said signal to control said duty cycle of said switch as a function of said least and most significant bits of said digital duty cycle signal.

5. The controller as recited in Claim 1 wherein said oscillator is a ring oscillator.

6. The controller as recited in Claim 1 wherein said modulator comprises a multiplexer, a counter, at least one flip-flop and a frequency divider.

7. The controller as recited in Claim 1 further comprising a duty cycle processor configured to provide said digital duty cycle signal.

8. A method of controlling a duty cycle of a switch of a power train of a power converter, comprising:

providing a clock signal having multiple phases;

selecting a phase of said clock signal as a function of a portion of a digital duty cycle signal to refine a resolution of said duty cycle; and

supplying a signal to control said duty cycle of said switch as a function of said digital duty cycle signal.

9. The method as recited in Claim 8 wherein said supplying comprises supplying a pulse width modulated signal to control said duty cycle of said switch.

10. The method as recited in Claim 8 wherein said digital duty cycle signal includes least and most significant bits, said selecting comprising selecting said phase of said clock signal as a function of said least significant bits of said digital duty cycle signal to refine said resolution of said duty cycle.

11. The method as recited in Claim 8 wherein said digital duty cycle signal includes least and most significant bits, said supplying comprising supplying said signal to control said duty cycle of said switch as a function of said least and most significant bits of said digital duty cycle signal.

12. The method as recited in Claim 8 wherein said providing is performed by a ring oscillator.

13. The method as recited in Claim 8 wherein said digital duty cycle signal includes least and most significant bits, said supplying employing trailing edge modulation of said digital duty

cycle signal in accordance with said least and most significant bits to derive said signal to control said duty cycle of said switch.

14. The method as recited in Claim 8 further comprising furnishing said digital duty cycle signal prior to said act of selecting.

15. A power converter, comprising:

a power train including a switch configured to conduct for a duty cycle and provide a regulated output characteristic at an output of said power converter; and

a controller, including:

an oscillator configured to provide a clock signal having multiple phases; and

a modulator configured to select a phase of said clock signal as a function of a portion of a digital duty cycle signal to refine a resolution of said duty cycle and provide a signal to control said duty cycle of said switch as a function of said digital duty cycle signal.

16. The power converter as recited in Claim 15 wherein said modulator is configured to provide a pulse width modulated signal to control said duty cycle of said switch.

17. The power converter as recited in Claim 15 wherein said digital duty cycle signal includes least and most significant bits, said modulator being configured to select said phase of said clock signal as a function of said least significant bits of said digital duty cycle signal to refine said resolution of said duty cycle, said modulator further being configured to provide said signal to control said duty cycle of said switch as a function of said least and most significant bits of said digital duty cycle signal.

18. The power converter as recited in Claim 15 wherein said oscillator is a ring oscillator.

19. The power converter as recited in Claim 15 wherein said modulator comprises a multiplexer, a counter, at least one flip-flop and a frequency divider.

20. The power converter as recited in Claim 15 wherein said controller further comprises a duty cycle processor configured to provide said digital duty cycle signal and said power

converter further comprises a driver configured to provide a drive signal to said switch based on said signal provided by said modulator.